

Date: Tuesday, 24/02/2009 9:47:53 AM
 User: Jean-Luc Menard

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: STUD
Job Number	: 46052		
Estimate Number	: 13141		
P.O. Number	:	Part Number	: D36911
This Issue	: 24/02/2009 S.O. No. :	Drawing Number	: D3691 REV B
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: / / Type : MACHINED PARTS	Drawing Revision	: B
Previous Run	: 44826	Material	:
Written By	: <u>JLM 09.02.24</u>	Due Date	: 03/03/2009 Qty: 24 Um: Each
Checked & Approved By	: <u>---</u>		
Comment	Est Rev:A New Issue 08-01-29 JLM Verified By:EC Est Rev:B Material Change 09-01-07 JLM Verified By:EC Est Rev:C Added note on Step 2 09-01-26 JLM Verified By:EC		

NOT 19

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description :

1.0

M174PHH900R1000

17-4PH SS ROUND BAR 1.00 COND.900



Comment: Qty.: 0.7350 f(s)/Unit Total : 17.6400 f(s)
 17-4PH SS ROUND BAR 1.00 ****CONDITION H-900****
 BATCH: ~~1411055~~ M111055

JLM 09/03/11

(24)

2.0

BAND SAW

BAND SAW



Comment: BAND SAW
 DO NOT USE CHOP SAW
 Cut blank 7.850" long

JLM 09/03/11

(24)

3.0

DOOSAN LATHE

DOOSAN LATHE



Comment: DOOSAN LATHE
 1-Turn as per Folio FA716 Rev: N/A & Dwg D3691 Rev: B
 2-Deburr per dwg D3691

JLM 09/03/11

4.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JLM 09/03/11

5.0

LATHE CONV.

CONVENTIONAL LATHE



Comment: CONVENTIONAL LATHE
 Face to finished length as per dwg D3691 AND center drill as per Dwg D3691

JLM 09/03/12 (24)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3691-1 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: S Date: 08/04/15

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: <u>46052</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>08/03/13</u>	<u>3.0</u>	<u>.625 +.004 - 0.0 oversize the worst one being .638 (x2) - .631(x3). 5 all together. R.C.</u>	<u>[Signature]</u> <u>05/04/12</u>	<u>Qty 5 scrap & destroy NO replace.</u>	<u>[Signature]</u> <u>08/03/13</u>	<u>[Signature]</u> <u>08/04/08</u>	<u>[Signature]</u> <u>08/04/08</u>	<u>[Signature]</u> <u>08/04/08</u>

NOTE: Date & initial all entries

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: STUD

Job Number: 46052

Part Number: D36911

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

09/13/12

24

7.0

DOOSAN LATHE

DOOSAN LATHE



Comment: Doosan Lathe

1- Turn as per Folio FA716 Rev. 1/A & Dwg D3691 Rev. 12

2-Deburr per dwg D3691

09/03/12

24

8.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

09/03/12

24

9.0

QC8

SECOND CHECK



Comment: SECOND CHECK

09/04/08

19

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 127

9/4/13

19

5-0

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/04/14

Job Completion



issue P10: 8537 C209/04/08

19

LPI Per ASTM 1417 level 2

11 9/04/14

9.2 received + inspect
ensure cage is attached:

10/4/8 (19)

9.3 QCS inspect -> 8/4/9

DART AEROSPACE LTD		Work Order: 46052
Description: <i>std</i>		Part Number: 3691-1
Inspection Dwg: <i>3681-1</i>	Rev: <i>13</i>	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
ϕ .695	$\begin{matrix} +.006 \\ -.001 \end{matrix}$.695	—			
.625	$\begin{matrix} +.004 \\ -.000 \end{matrix}$.628	—			
1.25	$\begin{matrix} +.000 \\ -.030 \end{matrix}$	1.233	—			
ϕ .825	$\begin{matrix} +.008 \\ -.001 \end{matrix}$.825	—			
1.31	$\begin{matrix} +.030 \\ -.030 \end{matrix}$	1.310	—			
1.65	$\begin{matrix} +.030 \\ -.030 \end{matrix}$	1.650	—			
.750	$\begin{matrix} +.000 \\ -.010 \end{matrix}$.746	—			
ϕ .659	$\begin{matrix} +.000 \\ -.015 \end{matrix}$.657	—			
2.90	$\begin{matrix} +.030 \\ -.030 \end{matrix}$	2.925	—			
3/4-16 UNF-2A	N/A	3/4-16 UNF-2A	—			
7.750	$\begin{matrix} +.015 \\ -.015 \end{matrix}$	7.753	—			
.375	$\begin{matrix} +.000 \\ -.010 \end{matrix}$.369	—			
ϕ .189	$\begin{matrix} +.005 \\ -.001 \end{matrix}$	ϕ .192	—			
R.25	$\begin{matrix} +.030 \\ -.030 \end{matrix}$	R.250	—			
R.50	$\begin{matrix} +.030 \\ -.030 \end{matrix}$	R.500	—			

Measured by: <i>and</i>	Audited by: <i>SD</i>	Prototype Approval:
Date: 09/03/11	Date: 09/04/08	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

[Signature]



RELEASED
08/12/15

D3691-1 STUD

NOTES:
1) MATR

- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
2) FINISH: NONE
3) TOLERANCES: PER DART Q51 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.81 lb
8) LPI PER ASTM 1417 LEVEL 2

B	CHANGE TO 17-4PH H-900(ZN 48-1); Ø0.685 WAS Ø0.685 (ZN D8-1); REFORMATTED TO CURRENT DWG	RF	08.11.24
A	NEW ISSUE	RF	08.03.12
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESSBURY, ONTARIO, CANADA DRAWING NO. D3691 TITLE STUD COPYRIGHT © 2000 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OUTSIDE OF COOPERATING WITH THE OTHER PERSON WITH WHOM WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	
DRAWN	RF		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>	REV.	SHEET 1 OF 1
DATE	08.11.24	SCALE	NT

Jean-Luc Menard

From: David Shepherd [dshepherd@dartaero.com]
Sent: March 9, 2009 12:48 PM
To: 'Jean-Luc Menard'
Cc: 'Mike Petsche'; 'Roberto Fuentes (Roberto Fuentes)'
Subject: RE: engine mount studs D3691 & D3688

JL,

As discussed, it is acceptable to change from a #2 center drill to a #4 center drill on current production of the D3691 & D3688-engine mount studs.
Please consider this email acceptance of this deviation.

Roberto,

Please work with Kim to put D3691 and D3688 Under Review.
Then, please update drawings D3691 and D3688 for future production over the next month or so.

Thanks,
David

-----Original Message-----

From: Jean-Luc Menard [mailto:jmenard@dartaero.com]
Sent: Monday, March 09, 2009 9:44 AM
To: David Shepherd (David Shepherd)
Cc: Mike Petsche; Roberto Fuentes (Roberto Fuentes)
Subject: engine mount studs D3691 & D3688

David,

As dicussed,we would change the center drill in the parts to #4 from #2.

This would result in better support in the lathe resulting in better surface finish.

This is fine for these parts,what did you want to do for future parts?

Let me know.

JLM

Jean-Luc Menard

Production Engineering Coordinator

1270 Aberdeen Street

Hawkesbury Ontario

Canada K6A 1K7

Tel: (613) 632-5200 Ext 227

<mailto:jmenard@dartaero.com> jmenard@dartaero.com



LIQUID PENETRANT TEST REPORT

P - 1369 2

PAGE 1 OF 1

CLIENT	DART AEROSPACE	DATE	APR 8, 2009	TIME	AM <input type="checkbox"/> PM <input type="checkbox"/>
ATTENTION	LINDA LACELLE	ACUREN JOB No.	188 09 1369		
ADDRESS	1270 ABERDEEN ST	PO/WO No.			
	HAWKESBURY, ONT.	WORK LOCATION	HAWKESBURY		
		ACCEPTANCE STD.	ASTM 1417/QSI-038	REV./DATE	2005
PROJECT	BRACKETS AND STUDS				
ITEM(S) EXAMINED	JOB #S 44684, 45911, 45912, 46052				

JOB DESCRIPTION	PROCEDURE No. LT-0002 REV./DATE	TECHNIQUE No. LT-TECH2 REV./DATE
'PART No. D36873/D36871/D36873/D36911 MATERIAL THICKNESS		
SCOPE WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE		

TEST DETAILS

METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND	MAGNAFLUX		BLACK LGHT8171	<input checked="" type="checkbox"/> OUTPUT > 1000 μ W/cm ²	<input type="checkbox"/> AMBIENT < 2 fc
PENETRANTZL67	MINIMUM DWELL TIME	45 MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O	MINIMUM DRY TIME	>10 MIN.	OTHER	CAL JAN 24 09	
DEVELOPER SKDS2	MINIMUM DWELL TIME	10 MIN.	LIGHT METER S/N	CAL DUE DATE	
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY		

TEST SURFACE

SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input type="checkbox"/> AS WELDED	<input type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL
SURFACE TEMPERATURE	<input type="checkbox"/> < -4°C/ 20°F	<input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F	<input type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	

RESULTS- (☐ METRIC ☒ IMPERIAL)

FLUORESCENT LIQUID PENETRANT INSPECTION

CARRIED OUT ON 100% EXTERNAL

SURFACE ON:

44684- 6 BRACKETS

45911- 5 BRACKETS

45912- 4 BRACKETS

46052- 19 STUDS

RESULTS: NO INDICATION OF DEFECTS.

ITEMS ACCEPTABLE TO STANDARD

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner operator and the owner operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE		DTR # E 27430	
TECHNICIAN (SIGNATURE):		REPORT REVIEWED BY:	
NAME (PRINT):	JASON HEWETT	NAME INITIALS	
	1 st TECHNICIAN	2 nd TECHNICIAN	
CGSB LEVEL	2	CGSB LEVEL	SNT LEVEL
CGSB REG. No	6156	CGSB REG. No	

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY